Zeus User Meeting

March 7th, 2012

Agenda

- Known Issues

- Batch System Command Change

- Symbolic Links

- Best practices

- Quick Start Training in Boulder
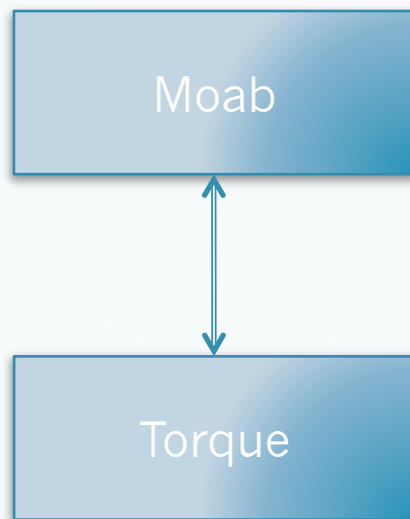
- Open Forum

Outstanding Issues

- Details of issues and current status can be found at:
  - https://nesccdocs.rdhpcs.noaa.gov/wiki/index.php/Known_Issues
  - We'll take a look at this site...

Batch System Command Change

- No longer use the msub and mjobctl/canceljob

- To submit a job us qsub
  - The options are identical to the msub command

- To cancel a job use qdel
  - If a job doesn't die, try the –p option

- The msub will quit working soon

Workload Management vs. Batch System

Moab

↕

- Provides the intelligence for scheduling
- Makes the actual decisions
- Provides additional capability for grid computing

Torque

- Provides control and communication over the resources
- Is responsible for job launch and monitoring

- Our goal was to use the Moab commands and try to provide a common interface between Gaea, Zeus, and eventually Jet

- Moab commands provide much additional functionality, none that we need currently need, price was too great

- Moving to method that has worked well on Jet

Benefits of Tool Change

- Solves current outstanding issues
  - JobID's are sometimes Moab.$ID
  - Delays in msub/canceljob completion
  - Inconsistent state from showq
  - Use of "**#PBS –d .**" Works now

- Provides additional benefits
  - Allows administrators to make changes to Moab configuration silently, not interrupting workflows
  - Job submissions are faster
  - Qdel is more consistent

We will continue to press the vendor to improve the performance and stability of the Moab commands.

Symbolic Links

- Vapor is going away in a few weeks
  - Many scripts/codes from Vapor use specific directory structures
  - This limits portability to external resources, but the Vapor users need to be successful quickly

- We will create a series of symbolic links at the / level temporarily
  - We will work with NCEP developers to develop a complete list
  - These links will be in place for a limited time (greater than 90 days)
  - This will give the Vapor users time to convert their scripts/codes to use a more portable methodology

Zeus Best Practice

Abstracting Paths in Batch Scripts

- Use environment variables to define paths for your batch scripts and workflows

- Reference these variables throughout your script

- By doing this, you only have to make changes in one place

- This leads to more portable scripts and reduces risk of typos

This best practice is documented along with others at:
https://nesccdocs.rdhpcs.noaa.gov/wiki/index.php/Zeus_Best_Practices

Zeus Best Practice
Abstracting Paths in Batch Scripts

- Example1:

```
#!/bin/ksh --login
#PBS -d .
#PBS -A jetmgmt
#

export NPES=$PBS_NP

export BASEDIR=`pwd`
export STMPDIR=${BASEDIR}/tmp
export WORKDIR=${STMPDIR}/wrf.$PBS_JOBID
export EXEDIR=${BASEDIR}/src
cd $WORKDIR
…
cp $BASEDIR/input/* $WORKDIR
…
mpiexec_mpt -np $NPES wrf.arw
```

Zeus Best Practice

Abstracting Paths in Batch Scripts, Case 2

- If there are many scripts within a workflow, put the definitions into a single file and source them.

Batch script:

```
#!/bin/ksh --login
#PBS -d .
#PBS -A jetmgmt
#

export NPES=$PBS_NP
source model.varlist
cd $WORKDIR
…
cp $BASEDIR/input/* $WORKDIR
…
mpiexec_mpt -np $NPES wrf.arw
```

model.varlist:

```
export BASEDIR=/scratch1/portfolios/BMC/nesccmgmt/Craig.Tierney/wrf
export STMPDIR=${BASEDIR}/tmp
export WORKDIR=${STMPDIR}/wrf.$PBS_JOBID
export EXEDIR=${BASEDIR}/src
```

Quick Start Training in Boulder

- We will repeat the 2-hour quick start training in Boulder
    - Times/Dates
        - Wednesday, March 14. 2:00-4:00PM MST, Room 2B407
        - Friday, March 16. 9:00-11:00AM MST, Room 2A305
    - Will set up telecon and web session
    - Instructor: Eric Schnepp

- "B" group (advanced) training is being developed
    - Planned for Early April

Thank You!

now...
Open Forum